

DOCUMENT-IDENTIFIER: US 5956611 A
TITLE: Field emission displays with reduced light leakage

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DWKU:
5956611

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DEPR:
Certain silicided silicon materials are sufficiently opaque to prevent light entering the field emission display from passing through the extractor 14 and reaching the semiconductor junction 28. The inventors of the present invention have appreciated that approximately 500 angstroms of titanium silicide ($\text{TiSi}_{\text{sub.x}}$) or titanium silicide nitride ($\text{TiSi}_{\text{sub.x}}\text{N}_{\text{sub.y}}$) are sufficiently opaque to light to prevent undesirable photon induced leakage. Those skilled in the art will appreciate other silicided materials which are also sufficiently opaque to light to prevent adverse leakage including suicides of tungsten, cobalt, niobium, and molybdenum.

DEPR:
Light sensitivity can be reduced if the extraction grid is formed from materials with a large extinction coefficient. Since $a=4\pi K/\lambda$. (where a is the absorption coefficient, K is the extinction coefficient, and λ is the wavelength), a high K results in a high absorption coefficient and less light penetration (penetration depth is inversely proportional to the absorption coefficient). Photons penetrate silicon thickness of approximately 10,000 Angstroms at wavelengths of 400 to 800 nanometers